# Index

A	Bureau of Reclamation: 13
Administrative support: 9– 10, 35, 45–46	Bush, George: 5–6, 7, 25
Aerial reconnaissance: 10	$\mathbf{C}$
Agnos, Art: 69-70	California, governor of: 4,
Air Rescue and Recovery	6, 39, 61
Group, 129th: 10	California Air National
Airlift assistance: 9, 10	Guard: 10
Airports: 41, 58–59	California Army National
Alameda, CA: 47, 51	Guard: 10
Alameda County, CA: 6, 21,	California Department of
51	Fish and Game: 48
Alameda Naval Air Sta-	California Department of
tion: 9, 10	Transportation (CAL-
Albany, CA: 47	TRANS): 23, 47–48, 55–
American Red Cross: 4, 9,	58
10	California Department of
	Water Resources: 13
$\mathbf{B}$	California Division of
Baughman, Bruce: 20, 21,	Mines and Geology: 52-
40, 41, 44	53
Baxter, Lt. Gen. George: 15,	California National Guard:
69–70	10
Bay Bridge: 9, 15, 19, 47,	California Office of Emer-
55, 58, 59, 69	gency Services: 8, 10, 13,
Bay Farm Island: 47	15, 25, 52–53, 67, 68
Beale Air Force Base: 10	Carlson, Col. Albert E.: 8
Berkeley Marina: 48, 51	Catastrophic Disaster Re-
Berkeley Yacht Harbor: 47	sponse Group: 4, 5
Best, Robert K.: 55–56	Cheney, Richard: 7
Bhamidipaty, Surya: 64–65	Clerical personnel: 20, 25,
Bridges: 51	35
Brussard, Bob: 20, 21, 28	Coffey, Lt. Col. William T.:
Buena Vista Farm, Watson-	11, 14, 21–22, 41, 42, 44,
ville, CA: 49	45–46
Buildings, collapse of: 1–2,	Commander's Awards for
9	Civilian Service: 70

Communications coordination: 9, 10, 14, 30, 69, 71 Communications problems: 11–13, 19 Construction equipment: 9 Construction management assistance: 20 Contracting authority: 13-14, 17, 63 Contractors: 27, 28, 33–34, 48, 63 Contracts: 13, 14–15, 17, 48, 53, 63 Corps of Engineers: see U.S. **Army Corps of Engineers** Corralitos Creek: 63 Cost accounting: 22, 40 Cost estimates: 42, 44, 61, 63 Cost sharing: 39, 47, 68 Cranes, damage to: 41 Culp, Col. Dennis K.: 13, 14, 21–22, 27–28, 34, 35, 40 - 41Cypress Street Viaduct (I-880): 1-2, 9, 15, 55-57, 58

# D

Damage assessment: 10, 15, 16, 17, 19, 21, 22–23, 25, 27, 35–36, 39–46, 47, 51, 53, 55–57, 59

Damage survey reports: 21, 39–46, 59

Dams: 13, 15, 16, 39

Deaths: 1–2

Debris, disposal of: 57–59

Directorate of Military Support (DOMS): 7, 10, 16

Disaster control officer: 7–8

Disaster Relief Act of 1974:
64
Disaster Relief Fund: 4
Docks: 47–48, 51
Dredging: 14–15, 47–48
Dretke, Gene: 28, 32, 34
Dutra Dredging Company:
48

#### $\mathbf{E}$

East Bay harbor: 47, 59
Edmisten, Robert: 64–65
Elmore, John P.: 4, 63
Emeryville Marina: 51
Engineers: see U.S. Army
Corps of Engineers
Engineering and Housing
Support Center (EHSC):
17
Environmental Protection
Agency: 4, 48, 57–58
Erwin, Larry L.: 69–70

#### $\mathbf{F}$

Federal Aviation Administration: 4, 59 Federal Emergency Management Agency (FEMA): 3-6, 7, 9-10, 13-14, 19-20, 21, 23, 25, 27–32, 34, 36, 39–43, 47–49, 51, 53, 55, 61, 64, 67-71 crisis management staff: 3 disaster application centers: 5, 27, 30, 31–32 disaster field office: 9-10, 19, 20, 21–23, 30, 32, 35, 39, 42–44, 46, 52, 64, 67, 69

emergency information and coordination cen- ter: 4	Golden Gate Fields: 47 Golden Gate Reserve Center: 10
hazard mitigation	Gorup, Roy: 41
team: 35, 64–65	Graham, Maj. Gen. Todd P.:
Region IX Interagency	7–8
Steering Committee:	Grahl, Helga: 12, 41
64	Granite Construction: 63
training provided by:	Grants, federal: 39–46
31–32, 35, 42–44	Grebinski, Mike: 21–22
Federal Highway Adminis-	TT
tration: 56	H
Ferrin, Lt. Col. Frederick:	Habitability inspections:
11, 14	27, 28, 31–32, 36, 44–45
Ferry service: 47–48, 51, 59	Hall, Robert: 64–65
Fire fighting: 8–9, 11	Hamner, Tommie C.: 6, 8, 15, 47, 64
Fires: 2, 8–9, 69 Fisheries: 57–58	Hatch, Lt. Gen. Henry J.:
Flood Control and Coastal	13, 16, 27–29, 56, 70
Storm Emergencies: 20,	Hazard mitigation: 4, 64
61	65
Flood control systems: 15,	Hazard mitigation team:
20, 61, 63, 69–70	35, 52, 64–65
Food, emergency: 9	Heating systems: 49
FORSCOM: 7-8	Hecker, Edward: 12, 14, 19-
Fort Belvoir, VA: 17	20, 21, 41
Fort Mason: 11	Hempen, Greg: 64-65
Franklin, Gus: 64–65	High Street Bridge: 51
Fraud: 36	Highways
Fruitvale Avenue Railroad	Cypress Street Viaduct
Bridge: 51	(I–880): 1–2, 9, 15,
Fulton, Dave: 13, 14, 19–	55–57, 58
20, 22, 31–32	damage assessment:
C	25, 55–57
G	Embarcadero Freeway:
General Accounting Office: 67	2, 11 I–480: 2
General Services Adminis-	Hollister, CA: 30, 31, 33,
tration: 4, 59	35–36
Geotechnical assistance:	Homeless, shelters for the:
51–53	1, 2, 8–9, 10, 34, 36, 49
	·, , -, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,

Housing assistance: 27, 36 Hurdle, Jack: 64–65 Hurricane Hugo: 5, 27, 36, 40–41, 67–68, 69, 70

# I

Individual assistance programs: 6, 20, 21–23, 27–37, 44–45, 69, 70
Injuries: 1–2

#### K

Kelly, Brig. Gen. Patrick: 15 Komoroske, Paul: 64–65 Kuzmiak, Pat: 12

Lake Elsman dam: 15

### L

Landslides: 51-53 Language differences, problems posed by: 35-36 Law enforcement, support to: 8-9, 10 LeCuyer, Col. Jack A.: 13, 29-30, 55-56 Lessons learned: 67–68 Levees damage assessment: 13, 16, 58 repair of: 23, 39, 61, 63 Lexington dam: 15 Lighting equipment: 8–9 Loma Prieta Mountain: 1 Los Angeles District: 59 Los Gatos, CA: 30, 31, 33

# M

McCarthy, Leo T.: 6 Manson Dredging: 48 Marina Area Office: 32– 33, 35

Marina District: 2, 8–9, 11, Marine Air Group 42: 9 Marine Expeditionary Unit, 15th: 9-10 Marriott Hotel, dock slip dredged: 47 Mason, Lt. Col. Timothy: 21-22, 29-30, 32, 34 Mather Air Force Base: 10 Meritorious Service Medals: 70 Military Air Command: 58 Military police, use of: 8-9 Miller Sweeney Bridge: 51 Mission assignment letters: 25, 39–40, 47, 51 Missouri River Division: 45-46 Moffett Field Naval Air Station: 10 Monterey, CA: 6, 13, 19, 21, 25Mountain View, CA: 1, 19, 20, 22, 42

# N

ards Reduction Program: 64
National Guard: 10, 68
National Institute of Standards and Technology: 56
National Oceanic and Atmospheric Administration (NOAA): 57–58
Newell Creek dam: 15

National Earthquake Haz-

# $\mathbf{O}$

Oakland, CA: 9, 19, 30, 31, 33, 37, 55

Oakland Army Base: 59 Oakland International Airport: 41 Ocean disposal sites: 57–59 Ocean Dumping Act: 57-58 Office of Management and Budget: 67-68 Outer Harbor Terminal: 59

#### P

Pacific Gas and Electric: 9 Page, Robert W.: 70 Pajaro River: 61, 63 Panetta, Leon E.: 25, 52 Park Street Bridge: 51 Perry, Chuck: 64-65 Peterson, Grant C.: 3 Plan for Federal Response to a Catastrophic Earthquake: 3, 4-5, 19, 67 Port of Oakland: 41, 58-59 Power generators: 2, 9, 17 Preparedness: 3, 68–69, 70, Presidio: 8, 10, 14, 16, 59, 69, 71 Productivity: 33-34, 35 Public assistance programs: 20, 21-23, 39-46, 68, 69

# Q

Quality assurance: 32, 41, 42 Quality control: 32, 42-43 Quayle, Dan: 5-6

# $\mathbf{R}$

Reclamation, Bureau of: 13 Redwood City, CA: 30, 31, 33

Reimbursement arrangements: 25, 27, 40, 47, 51 Rental assistance checks: 36, 70 Rescue efforts: 9 "Response '89" exercise: 69 Richmond Inner Harbor: 51 Richter scale: 1 Rimbach, Capt. Charles: 32 Robert T. Stafford Disaster Relief and Emergency Assistance Act: 3–4, 6 Robertson, Lt. Col. James Jeffrey: 16 Runways: 41, 58, 59

S Sacramento, CA: 4, 8, 28, 68 Sacramento District: 11-12, 13, 15, 16, 19–20, 21, 22, 25, 29–31, 39, 41, 44, 51, 55–56, 57, 59, 69, 70 Sacramento River: 15 San Benito County, CA: 6, 21, 25 San Francisco, CA: 1-2, 6, 8-9, 21, 30, 33, 42, 44, 47-48, 59 San Francisco County, CA: 21San Francisco District: 12, 13, 14–15, 16, 19–20, 21, 22, 39, 47, 51, 53, 59, 61, 63, 69 San Francisco earthquake of 1906: 11 San Francisco Harbor: 9 San Francisco International

Airport: 59

San Joaquin River: 15

San Leandro Bay: 47 San Leandro Marina: 51 San Lorenzo River: 61, 63 San Mateo County, CA: 6, 21 Santa Clara, CA: 41 Santa Clara County, CA: 6, 21 Santa Cruz, CA: 1, 2, 9, 30, 31, 33, 42, 44, 61, 63, 69–70 Santa Cruz County, CA: 6, 21, 25, 52–53 Santa Cruz Department of Parks and Recreation: 51 Santa Cruz Mountains: 51–53, 61 Sausalito base yard: 15 School districts: 59 Seventh Street Marine Terminal: 58–59 Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Emergency Management Branch: 12 emergency operations center: 14, 22, 28 organizational structure for response: 19–23, 30, 41, 69 Structural damage to bridges: 51 to buildings: 2, 9, 28, 51 Sununu, John: 5–6  Tactical Command Readiness Exercise: 68 Technical assistance: 23, 47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17
Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Santa Cruz Mountains: 51–53, 61 Sausalito base yard: 15 School districts: 59 Seventh Street Marine Terminal: 58–59 Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Tactical Command Readiness Exercise: 68 Technical assistance: 23, 47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Sausalito base yard: 15 School districts: 59 Seventh Street Marine Terminal: 58–59 Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Tactical Command Readiness Exercise: 68 Technical assistance: 23, 47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
School districts: 59 Seventh Street Marine Terminal: 58–59 Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Tactical Command Readiness Exercise: 68 Technical assistance: 23, 47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Seventh Street Marine Terminal: 58–59  Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49  Ships, Navy: 9  Sills, David: 64–65  Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69  Skinner, Samuel K.: 5–6  Small Business Administration: 27, 59  Smith, Maj. Gen. James D.:  ness Exercise: 68  Technical assistance: 23, 47, 51–53, 57, 59  Todd Shipyard: 47, 51  Traffic control: 9–10  Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71  Transportation, means of: 10, 11, 17, 47–48, 59  Travis Air Force Base: 10, 17  Treasure Island Naval Sta-
Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  47, 51–53, 57, 59 Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Shelters for the homeless: 1, 2, 8–9, 10, 34, 36, 49 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Todd Shipyard: 47, 51 Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Traffic control: 9–10 Ships, Navy: 9 Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  Traffic control: 9–10 Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Sills, David: 64–65 Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.: Training: 3, 31–32, 35, 40, 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Sixth Army: 7–8, 13, 14, 15, 20, 67, 68, 69 Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.: 41, 43–45, 68–69, 70, 71 Transportation, means of: 10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Skinner, Samuel K.: 5–6 Small Business Administration: 27, 59 Smith, Maj. Gen. James D.:  10, 11, 17, 47–48, 59 Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
Small Business Administra- tion: 27, 59 Smith, Maj. Gen. James D.:  Travis Air Force Base: 10, 17 Treasure Island Naval Sta-
tion: 27, 59 Smith, Maj. Gen. James D.:  Treasure Island Naval Sta-
Smith, Maj. Gen. James D.: Treasure Island Naval Sta-
tion: 9
Sobke, Brig. Gen. John: 12,
13–15, 17, 19–20, 21, 22, 25, 27–28, 41, 56, 61, 68, U.S. Air Force: 7, 8, 10
69, 71 U.S. Army: 7–11, 59
South Pacific Division: 11- U.S. Army Corps of Engi-
13, 16, 17, 20–23, 28–29, neers
47, 52, 53, 57, 61, 63, 68, costs: 37, 52
69, 71 Headquarters (HQ- Earthquake Operations USACE): 12–13, 15,
Earthquake Operations USACE): 12–13, 15, Order #2: 20–21 16, 27–28, 41, 61, 63

organization of response: 11–17 personnel management: 44-46 staffing: 28-31, 32-33, 35, 40–41, 44–46, 70 see also: specific districts and divisions U.S. Army Forces Command (FORSCOM): 7-8 U.S. Coast Guard: 57–58 U.S. Department of Defense: 7–10, 11, 65 U.S. Department of Education: 59 U.S. Department of Transportation: 4, 56 U.S. Fish and Wildlife Service: 48 U.S. Geological Survey: 52-53 U.S. Marine Corps: 9 U.S. Navy: 8, 9 USS Flint: 9 USS Fort Fisher: 9 USS Gompers: 9 USS Gray: 9 USS Kansas City: 9

USS Lang: 9

USS Pelilieu: 9, 10 USS Schenectady: 9 USS Texas: 9 Urban search and rescue mission: 8-9, 13-14, 20

 $\mathbf{V}$ 

Vallejo Pier: 51 Vickers, Bob: 20 Videotaping: 16, 57

### W

Waite, Daryl: 41
Water supplies: 9
Waterways Experiment
Station: 52, 53
Watsonville, CA: 30, 33, 49,
63
White House: 5-6
William Cotton and Associates: 53
Workload, management of: 20, 32-33, 42

#### Y

Yanagihara, Col. Galen: 11–12, 14, 25, 63 Young, Rich: 11–12, 20